

Programmable 4 Digit Universal Temperature Indicator / Controller Model DPM-4003 AL



DESCRIPTION

The Model DPM-4003 AL is a 4 digit (9999 to -1999) LED Universal Temperature Indicator that can be used in any application where temperature needs to be displayed and controlled. This DIN 48x96, high accuracy, high-quality panel meter is designed for accurate measurement & display (in °C, °F or K) of temperature from thermocouples (selectable from the front pushbuttons) of Type J, K, N, R, S, T, W5 and from RTDs such as PT100. Ni100 RTD is available as an option as well as other thermocouple types. The thermocouple and RTD signals are accurately linearised by the internal micro-controller. Options include programmable analog output, single, dual, three & four alarms, peak hold, RS232/485 output. The analog is rangeable from the front pushbuttons. The instrument is designed to European EMC directives EN 50081-1 and EN 50082-1.

Selected options now feature "Plug & Play" technology, allowing option boards to be ordered separately and field fitted when required.

FEATURES

- DIN 48 x 96 enclosure, 147mm depth
- 14,2mm high bright red LED display (optional green)
- -1999 to 9999 counts (4 digit display)
- Touch button programmable
- Programmable for °C, °F, and K, 4 digit display
- Programmable for TC of Type J, K, N, S, R, T, W5
- Programmable for RTDs such as PT100
- Low cost - high performance design
- "Plug & Play" feature available with selected options
- Analog output option with programmable zero & span
- RS232 & RS485 communication option
- Other thermocouples and RTDs available as an option
- Keypad lockout available at no extra charge

OPTIONS

DPM-3001-P AL	Two setpoints (solid-state relays)	DPM-3012 AL	Peak / valley hold
DPM-3001-M AL	Two setpoints (electro-mechanical relays)	DPM-3013 AL	RS 232 serial interface
DPM-3002 AL	RS485 serial interface	DPM-3017-P AL	3-setpoints (solid-state relays)
DPM-3003 AL	0 – 20mA / 4 – 20mA analogue output	DPM-3017-M AL	3-setpoints (electro-mechanical)
DPM-3004-P AL	One setpoint (solid-state relay)	DPM-3018-P AL	4-setpoints (solid-state relays)
DPM-3004-M AL	One setpoint (electro-mechanical relays)	DPM-3018-M AL	4-setpoints (electro-mechanical)
DPM-3006 AL	Isolated outputs (order with 3002/3/7/13)	DPM-3019 AL	Green display
DPM-3007 AL	0 – 10V analogue output	DPM-3020 AL	Ultra bright Red LED display
DPM-3008 AL	12 / 24V galvanic isolated DC supply	DPM-3022 AL	bar graph display
DPM-3009 AL	Parallel BCD output	DPM-3025 AL	Keypad lockout
DPM-3010 AL	95-265V AC/DC isolated power supply		

NOTE: Most of the above options are factory fitted. Customer / field fitted options are available as "plug & play" boards & software activated options. Contact factory for more information.

NOTE: Option DPM-3009 AL cannot be ordered together with the following options:
DPM-3001-M AL, DPM-3006 AL, DPM-3017-P/-M AL, DPM-3018-P/M AL.

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SPECIFICATIONS

INPUT RANGES

The temperature probes are accurately linearised in the following temperature ranges:

Type J	- 25 °C to + 900°C
Type K	- 25 °C to + 1275°C
Type N	+ 200 °C to + 1200°C
Type S	+ 625°C to + 1750°C
Type R	+ 625°C to + 1750°C
Type T-	- 235°C to + 25°C
Type T+	- 35°C to + 330°C
Type W5	+1150°C to + 2050°C
PT100	-165.0°C to + 600.0°C (max.999.9°F)
Ni 100 (option)	- 60.0°C to + 235.0°C

TC resolution	1°C (Type T+ is 0.1°C)
RTD resolution	0.1°C

Other ranges available on request.

POWER SUPPLY

STANDARD

115 / 230 VAC \pm 10% (standard), link selectable, 50/60 Hz, 5VA typical
 12 VDC or 24VDC non-isolated on request, 5VA typical

OPTIONAL

12VDC isolated switch mode power supply option (Option DPM-3008-12 AL), 5VA typical
 24VDC isolated switch mode power supply option (Option DPM-3008-24 AL), 5VA typical
 95V – 265V AC/DC switch mode power supply option (Option DPM-3010 AL), 5VA typical

ELECTRICAL SPECIFICATIONS

Accuracy	$\pm 0.5\% \pm 1$ count
Warm up time	15 minutes typically
Temperature coefficient	± 30 ppm / °C typically
Data retention	20 years typically
Operating temp. range	0 to +50°C
Storage temperature range	-40 to + 70 °C
European EMC directives	EN50081-1 & EN50082-1
Relays, electro-mechanical	250V AC, 30V DC, 2A, PF=1
Relays, solid state	400 V AC/DC, 0.5A, PF=1
Analogue output accuracy	0.1% (over full temp. range)

NOTE: When the instrument is first installed, it may take a few minutes before accurate readings are shown. This is normally due to the different temperatures between the instrument, panel and thermocouple cable, and these temperature have to stabilise for the cold junction compensation circuit to measure the correct temperature .

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PROGRAMMABLE SETTINGS

Display	: °C, °F, or Kelvin
Broken TC	: Selectable high or low
Broken RTD	: Selectable high or low

Other thermocouples and RTDs are available. Please consult the factory for special requirements.

*Analogue output zero	: -1999 to 9999 (for 0-20mA / 4-20mA or 0-5V / 0-10V out)
*Analogue output span	: -1999 to 9999
*Alarm values	: -1999 to 9999
*Alarm hysteresis	: 0 to 255 (default 1)
* Alarm delay	: 0 to 255 seconds (default 0)
* Alarm relay settings	: Selectable HI or LO alarm
* Alarm relay state	: Selectable normally open or normally closed
*RS485 address	: 1 to 127 available (0 is for factory use)
*RS232 / RS485 baud rate	: 2400, 4800, 9600, 19200
*Protocol options	: AL DPM's DIGIbus or ASCIIbus

* indicates options

NOTE: The AL DPM is normally supplied factory set as per customer's requirements, and does therefore not need programming upon delivery.

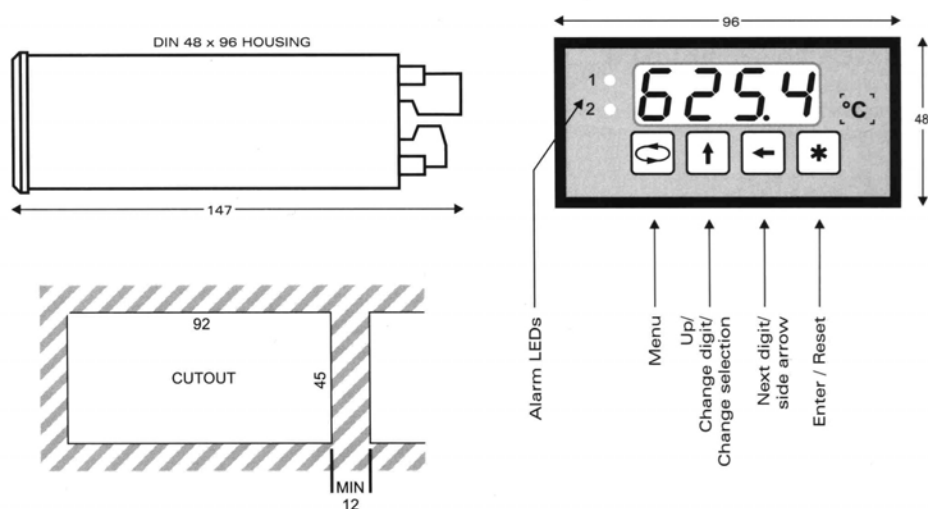
ORDERING EXAMPLE

Option modules (see page 1)

MODEL DPM-4003 AL – DPM-3001-P AL – DPM-3003 AL

Input: PT100
 Aux Supply: 230 VAC
 Analog output: 4-20mA = 0-300.0 °C
 Setpoints: 2 setpoints with solid state relays

FRONT PANEL DIMENSIONS & CUTOUT



DIN 48 x 96 industrial strength single piece housing
 Flame retardant ABS plastic, meets UL 94 V-0 flammability rating
 IP53 rating (front panel)
 IP65 option (seal)

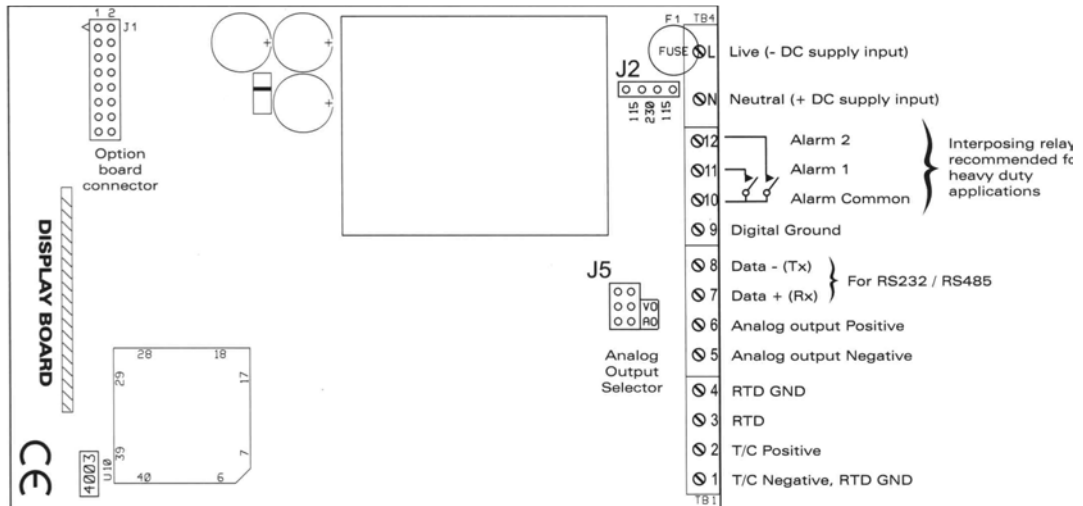
Dimension in mm

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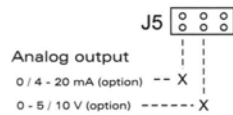
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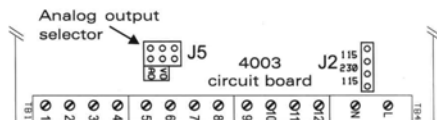
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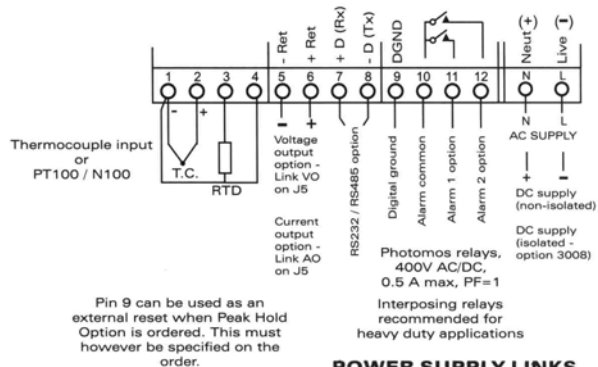
INTERNAL LINKS



APPLICATION EXAMPLES



NOTE : This instrument is designed for non-grounded thermocouple probes only.



POWER SUPPLY LINKS



GUARANTEE

This product is guaranteed against faulty workmanship or defective material, for a period of 3 (three) years from date of delivery by Andreas Lang GmbH.

Andreas Lang GmbH undertakes to replace without charge all defective equipment which is returned to it (transportation costs prepaid) during the period of guarantee, provided there is no evidence that the equipment has been abused or mishandled in any way. Andreas Lang GmbH reserves the right to alter any specification without notice.

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